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ABSTRACT

This study examines the impact of the Asian financial crisis on children in Indonesia. Data from four rounds of the 100 Villages Survey are used to examine changes in school attendance rates, child labor force participation, and health status. These data cover over 120 households in each of 100 villages around Indonesia and were collected prior to the crisis in May 1997 and three times after the onset of the crisis. Also examined are ways in which households report they are coping with the crisis. Findings show little evidence that the crisis has had a dramatic negative impact on children. School attendance dropped slightly after the onset of the crisis but has since rebounded to higher than pre-crisis levels. Fewer children are now working, although the older children who are working and are not attending school seem to be working longer hours. Comparisons of child health status indicators over time are complicated by changes in the questionnaire but appear to be relatively stable. Ongoing monitoring is necessary, however, because the impact on children may only be observed in the long run after households' financial resources have been completely depleted and several years of hardship have impacted on health. (Includes 21 notes. Contains 4 figures, 6 tables, an annex table, and 10 references.) (Author/BT)

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# The Impact of the Indonesian Financial Crisis on Children: An Analysis Using the 100 Villages Data

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*– December 2000 –*

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## Abstract

This paper examines the impact of the Asian crisis on children in Indonesia. Specifically data from four rounds of the 100 Villages Survey are used to examine changes in school attendance rates, child labour force participation and health status. We also examine ways in which households report they are coping with the crisis. The findings show little evidence that the crisis has had a dramatic negative impact on children. School attendance dropped slightly after the onset of the crisis but has since rebounded to higher than pre-crisis levels. Fewer children are now working, although the older children who are working and are not attending school seem to be working longer hours. Comparisons of child health status indicators over time are complicated by changes in the questionnaire but appear to be relatively stable. Ongoing monitoring is however necessary because the impact on children may only be observed in the long run – after households' financial resources have been completely depleted and several years of hardship have impacted on health.

## 1. Introduction

This paper examines the impact of the Asian financial crisis upon children in Indonesia. Data from four rounds of the 100 Villages Survey are used. These data cover 120 households in each of 100 villages around Indonesia and were collected prior to the crisis in May 1997 and then three times after the onset of the crisis – in August and December 1998 and May 1999.[1] The comparison of the pre- and post-crisis rounds hence allows us to examine the crisis impact and follow its evolution through time. The May 1999 data extends the period of study beyond what has been possible using other data sources and also allows us to examine two points in time – one pre-crisis (May 1997) and one post-crisis (May 1999) – at the same point in the annual calendar and so allay the possibility that differences are due to seasonal variation.

Several studies have examined the social impacts of the crisis. The findings can largely be summarized as showing that rather than being uniformly negative and severe, the crisis impact has been quite heterogeneous, depending on geographic location and household socio-economic status. Overwhelmingly, households have been shown to be very resilient in the face of hardship. This study confirms these findings. We find little change in school attendance, child labour force participation has actually declined and there is little evidence of a deterioration in child health status. It is possible however that the crisis will have longer term effects that are not captured in the current data. For instance, many households are currently supplementing their income with the proceeds of asset sales. It may only be once a household's

1 The survey is ongoing and a further round was conducted in August 1999. These data were however unavailable at the time of writing.

assets have been completely depleted that enrolment rates and other such indicators deteriorate. Health status is particularly likely to exhibit greater long-term than short-term impacts.

## 2. Data

The data used in this study are from the "100 Village Survey" (Survei Seratus Desa, SSD). This is a survey of 120 households in each of 100 villages across Indonesia. The survey is conducted by the Indonesian Central Statistical Agency (BPS) and funded by UNICEF. The villages are located in 10 districts (kabupaten), spread across eight of Indonesia's 27 provinces.[2] The villages were chosen to represent different types of villages in the rural economy. The survey was not designed to be a nationally representative sample and focuses disproportionately on rural and relatively poor areas. It hence is not appropriate to generalize the specific results generated here to the country at large. The school attendance rates calculated here, for instance, should not be thought of as national attendance rates but rather attendance rates in the villages studied. However, there is no reason to expect these to differ radically from other similar villages around Indonesia.

The first round of the survey was conducted in 1994. Further rounds were conducted in May 1997, August 1998, December 1998, May 1999 and August 1999.[3] The data can in theory be merged across time to form a panel because in each round the majority of households from the previous round are reinterviewed. In this paper however, we do not attempt to exploit the panel nature of the data. There are a number of reasons for this. First, merging across rounds of the data is not easy. It is necessary to match households manually using the village of residence and the name of the household head. This is very time consuming and at this point in time only the May 1997, August 1998 and December 1998 rounds have been successfully matched. Second, not all households were tracked across time. Of the 12,000 households interviewed in May 1997, only 8,142 were also interviewed in August 1998, and only 6,201 of these households appear again in the December 1998 data. The merged sample would decrease further if it included the later May 1999 round. The merged sample would not only be significantly smaller than the original sample but there are also legitimate concerns about sample attrition bias. The sample would remain representative if those households that were followed were chosen randomly. This was the initial sample design but it is not clear that this was followed in practice. Hence, it is plausible that those who appear in the matched sample are those that were easier to track and so may have differing characteristics to those who left the sam-

2 The provinces covered are Riau, Lampung, West Java, Central Java, Bali, Central Nusa Tenggara, East Kalimantan and South East Sulawesi.

3 The August 1999 round was not available for analysis at the time of writing.

ple.[4] By using the entire sample in each round (that is, not restricting our attention just to the merged households) we avoid a large part of this problem.[5]

The SSD provides both information on the household in which the child lives and information on the individual characteristics of the child. Information is gathered on the demographic attributes of the interviewees, on education, health and fertility behaviour, migration, labour market activity, socio-economic status and crime. The post-crisis surveys focus to a greater extent on the living standard of the household and gather information on coping mechanisms.[6]

## 3. Results

### ▪ 3.1 *Educational outcomes*

Table 1 presents attendance rate figures by school level in each of the rounds of the survey. Children are designated as being primary school age if they are six to 12 years old, lower secondary level if they are 13 to 15 years old and upper secondary if they are aged 16 to 18 years.[7]

The primary school attendance rates are clearly affected by the month in which the survey was conducted. The school attendance rate for children aged 6 to 12 increased markedly from 80 per cent in May 1997 to 87 per cent in August 1998. This however is attributable to May being towards the end of the school year and August being at the start of the school year. Some six-year-olds in August are hence enrolling in their first year of school whereas most children that turned six during the 1996/1997 school year are not attending school in May 1997 because they are waiting for the new school year. Figure 1 shows this clearly. For ages six to eight years, the August and December attendance figures lie considerably above the May figures for both 1997 and 1999. Comparing May 1997 with May 1999 however, removes this effect. For every age group the May 1999 attendance rates are either equal to or higher

4 Thomas, Frankenburg and Smith (2000) examine attrition in the Indonesian Family Life Survey. They find that households that had moved and were the most difficult to track were likely to be smaller and better-off than other households. A similar pattern is seen in the 100 Villages data. Those households who appear in both rounds seem to have slightly lower incomes and expenditures but in other respects appear similar.

5 The representativeness of each round still depends on the sampling frame used to select households to replace those that were meant to be tracked and could not be located. If these were chosen randomly, the sample will remain representative of the village populations.

6 The final sample sizes differ slightly across rounds and with the variable under observation. There were approximately 15,000 school-aged children in each round of the data. About 9,000 in each round were aged 10 to 17 (constituting the sample used for the analysis of child labour). Approximately 12,500 in each round were aged 10 and under, and 5,300 aged five and under (these constituting the samples used for the analysis of health outcomes).

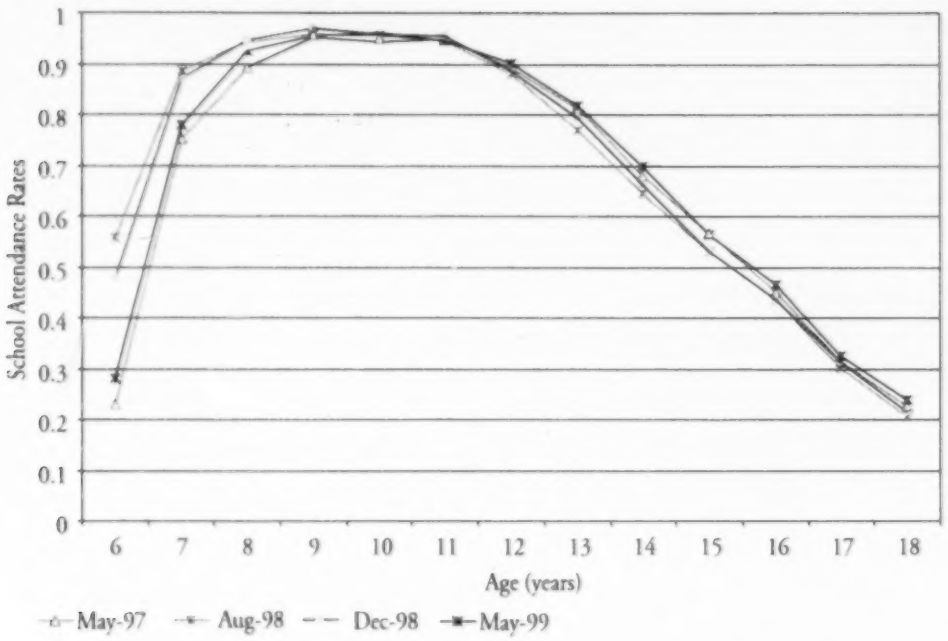
7 The official age at which children start school in Indonesia is seven years but, as can be seen from Figure 1, many children start attending school at 6 years of age. For this reason we have included six-year-olds in the analysis.

than the May 1997 (pre-crisis) rates. This can also be seen in the figures in Table 1. Overall primary school attendance increased from 80 per cent in 1997 to 82 per cent in 1999.

Table 1: *School Attendance Rates (percentages)*

| | May-97 | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|
| Primary School (6-12yrs) | 80 | 87 | 86 | 82 |
| Lower Secondary School (13-15yrs) | 69 | 65 | 67 | 70 |
| Upper Secondary (16-18yrs) | 33 | 32 | 32 | 34 |
| **Urban/Rural Comparison** | | | | |
| A. Primary: urban | 85 | 90 | 89 | 84 |
| rural | 79 | 87 | 86 | 81 |
| Ratio (urban/rural) | 107 | 104 | 103 | 104 |
| B. Lower Secondary: urban | 81 | 78 | 80 | 81 |
| rural | 66 | 62 | 63 | 67 |
| Ratio (urban/rural) | 122 | 126 | 126 | 121 |
| C. Upper Secondary: urban | 48 | 51 | 49 | 53 |
| rural | 29 | 26 | 27 | 29 |
| Ratio (urban/rural) | 166 | 197 | 184 | 187 |
| **Male/Female Comparison** | | | | |
| A. Primary: male | 79 | 87 | 86 | 81 |
| female | 82 | 88 | 87 | 82 |
| Ratio (Male/Female) | 97 | 98 | 98 | 98 |
| B. Lower Secondary: male | 68 | 65 | 66 | 68 |
| female | 71 | 65 | 67 | 71 |
| Ratio (Male/Female) | 96 | 100 | 99 | 96 |
| C. Upper Secondary: male | 35 | 33 | 33 | 34 |
| female | 32 | 31 | 31 | 34 |
| Ratio (Male/Female) | 110 | 107 | 106 | 101 |
| **Java-Bali/Outer Islands Comparison** | | | | |
| A. Primary School: Outer Islands | 80 | 87 | 86 | 82 |
| Java-Bali | 81 | 88 | 87 | 82 |
| Ratio | 100 | 99 | 100 | 100 |
| B. Lower Secondary: Outer Islands | 71 | 70 | 70 | 71 |
| Java-Bali | 66 | 60 | 63 | 68 |
| Ratio | 108 | 117 | 110 | 105 |
| C. Upper Secondary: Outer Islands | 36 | 34 | 35 | 35 |
| Java-Bali | 30 | 28 | 29 | 34 |
| Ratio | 119 | 122 | 120 | 104 |

Figure 1: *Age Specific Enrolment Rates*




The secondary school attendance figures are less susceptible to monthly variation. Figures for lower secondary school show that attendance decreased significantly from 69 per cent in May 1997 to 65 per cent in August 1998. This dip in lower secondary school attendance from May 1997 to August 1998 could actually understate the true decrease (if there is significant dropout during the school year). However, lower secondary attendance rates rebounded to 67 per cent in December 1998 and the May 1999 figures which are free of seasonal bias show 1999 attendance (70 per cent) to be higher than the May 1997 figure.

The upper secondary figures show a similar, albeit smaller, dip from 33 per cent in May 1997 to 32 per cent in August 1998. Upper secondary attendance also increased to above its pre-crisis level by May 1999 (34 per cent).

There are a number of other sources of information on school attendance. The nationally representative National Socio-Economic Survey (Susenas) is the most comprehensive source of information on enrolment rates. It is collected annually in February by the Indonesian Statistical Agency (BPS). These data show only a slight decline in enrolments from 1997 to 1998 at the primary and junior secondary level and enrolments at all three school levels were higher than their pre-crisis levels by 1999 (Jones, Hagul and Damayanti, 2000, and Pradhan and Sparrow, 1999). This pattern also appears in the Ministry of Education's own enrolment data.

The Indonesian Family Life Survey is a further source of information on school enrolment.[8] The IFLS is a panel survey. The first round was conducted

8 The survey was conducted by RAND and Lembaga Demografi at the University of Indonesia. It is representative of about 83 per cent of the Indonesian population.

in 1993/94 and the second round just prior to the crisis in 1997/98. A subsample was reinterviewed after the onset of the crisis in late 1998 to allow an assessment of crisis impact. Frankenburg, Thomas and Beegle (1999) analyze these data. They similarly find much smaller declines in enrolments than were originally feared but larger declines than are evident from the Susenas and the Ministry of Education's data.[9]

In magnitude, the initial dip in lower secondary school enrolments shown in the 100 Villages data is larger than in the Susenas and smaller than in the IFLS.[10] The pattern in upper secondary enrolments is consistent with the 1999 Susenas figures.

Table 1 further disaggregates the school attendance figures and examines these changes by urban/rural status, gender and geographic location. At primary and lower secondary level, similar patterns are seen in rural and urban areas. From 1997 to 1999 rural areas, however, lost ground relative to urban areas at the upper secondary level. The large increase in urban school attendance at upper secondary level may be attributable to the lack of work for children in this age group in the cities, whereas in the rural districts children can be absorbed into self-employment on farms. The August and December urban/rural comparisons are likely to be influenced by seasonality in the agricultural sector. These findings are slightly at odds with some previous studies which tend to show larger declines in enrolments in urban areas at this schooling level. The Susenas data, however, did not show any significant difference between changes in enrolment rates in rural and urban areas.

The figures by gender show that the decline in enrolments at the lower secondary level in August and December is greater for girls than for boys. By May 1999 however, attendance for both girls and boys is back to the pre-crisis level. At upper secondary level girls have actually gained on boys by May 1999.[11]

9 The IFLS figures are not presented separately for lower and upper secondary students but show that the number of children currently enrolled in school for 13 to 19 year olds decreased from 66.8 per cent early in the 1997/98 school year to 61.6 per cent early in the 1998/99 school year. Large declines were also recorded in the Indonesian government and the World Bank's survey of 600 schools in October 1998 which showed that although junior secondary enrolments decreased only 1.6 per cent in the 1998/1999 school year, there was a much larger drop in urban areas of 6.3 per cent (although curiously this decline seemed to have started before the crisis); see Filmer, Sayed, Boediono, Jiyono, Suwaryani and Indriyanto (1998).

10 Poppele, Sumarto, and Pritchett (1999) summarize the IFLS results, results from early rounds of the 100 Villages Survey and results from a further survey – the Rapid Kecamatan Survey. This survey only collected data on primary school enrolments. It found some evidence of delayed primary school enrolments. There have also been a number of smaller scale studies. The Central Independent Monitoring Unit conducted a three-province study in 1999 and a later larger study covering all provinces. SMERU also conducted a schools survey in the 1999/2000 school year. None of these sources of data show any signs of major declines in school enrolment rates into the 1999/2000 school year at either primary or lower secondary school level.

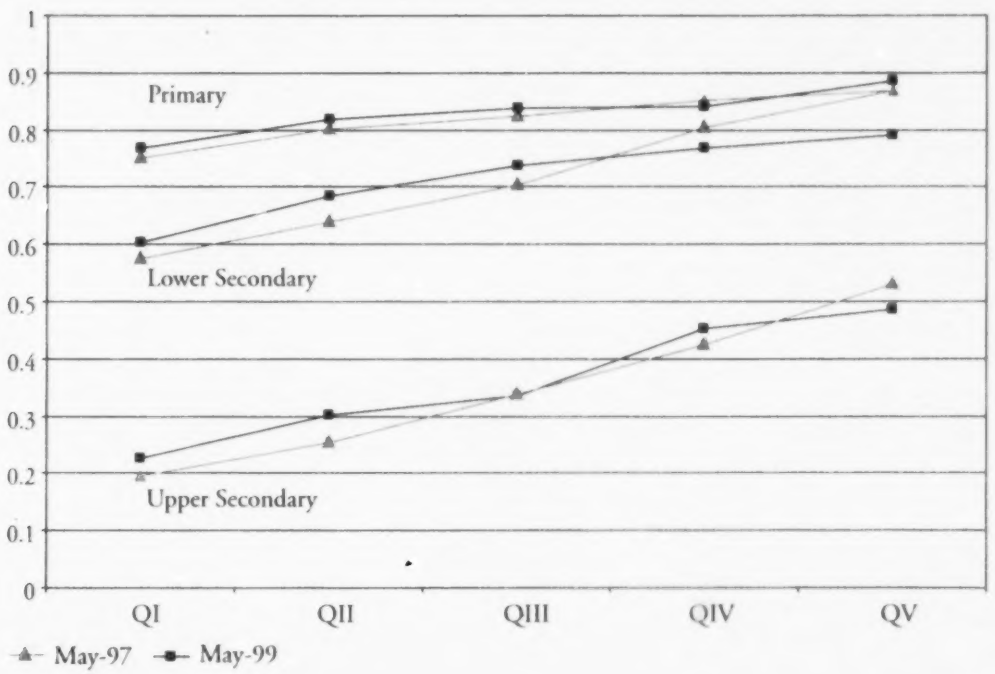
Gardiner (1999) and Molyneaux(1999) have also examined the school attendance data in the first three rounds of the 100 Villages Data.

11 The Susenas also does not show very marked differences by gender, Jones et al. (2000).

At the lower secondary level the initial decline in attendance in 1998 is coming almost entirely from within Java/Bali, although by May 1999 school attendance on Java/Bali had increased relative to the outer islands. School attendance in Java/Bali also increased relative to the outer islands at the upper secondary level.

Figure 2 presents changes in school attendance rates by per capita expenditure quintiles and school level for May 1997 and May 1999. The figures on which these are based are shown in Table A1 in the appendix. At the primary school level there is little difference across the quintiles. At the lower secondary level school, attendance dropped for children in the higher expenditure quintiles, but increased for those in the lower quintiles. This may reflect the larger room for increases amongst people in the lower quintiles. It is also consistent with those at the upper end of the expenditure distribution being more adversely affected by the crisis. The IFLS showed a quite marked decrease in enrolments amongst poorer children which is not evident here. The 100 Village results are, however, consistent with the Susenas as reported in Jones et al. (2000). They are also consistent with higher income earners being more mobile. Households that move are less likely to put their children back in school. There is a similar pattern at the upper secondary level where school attendance rates dropped only in the upper quintile of the distribution.[12]

Figure 2: *Enrolment Rates by Per Capita Expenditure Quintiles*




12 The difference between the IFLS results and those here and in the Susenas could reflect the different timing of the surveys. Both the May round of the SSD and the Susenas were conducted in 1999, after the peak of the crisis in about December 1998. The post-crisis IFLS round occurred in late 1998.

*Coping mechanisms*

In addition to the attendance figures, the 100 Villages data provide information on how households coped with the crisis. For instance, in the post-crisis period households are asked whether they resorted to pulling children out of school or sending them to work to overcome financial difficulties. Table 2 shows that only

Table 2: *Information on Educational Costs, Attitudes and Coping Mechanisms.*

| | | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|
| **Coping (fraction of households)** | | | | |
| | report pulling a child out of school | 0.03 | 0.02 | 0.01 |
| | report sending a child to work | 0.11 | 0.11 | 0.10 |
| **Difficulty with School Expenses:** | | | | |
| | fees | 0.28 | 0.23 | 0.24 |
| | books | 0.41 | 0.42 | 0.35 |
| | transportation | 0.09 | 0.09 | 0.09 |
| | other | 0.12 | 0.14 | 0.14 |
| **Source of Payment of Educational Costs:** | | | | |
| | self | | 0.96 | 0.95 |
| | scholarship | | 0.06 | 0.07 |
| | letter of inability to pay | | 0.01 | 0.01 |
| | fee relief | | 0.04 | 0.03 |
| **Method of Overcoming Difficulty Paying School Fees#:** | | | | |
| | delay payment | 0.33 | 0.27 | 0.52 |
| | borrow from others | 0.24 | 0.24 | 0.46 |
| | request help from others | 0.07 | 0.08 | 0.13 |
| | sell/pawn assets | 0.09 | 0.07 | 0.12 |
| | additional work | 0.20 | 0.18 | 0.26 |
| | surat miskin | NA | 0.01 | 0.02 |
| | other | 0.17 | 0.14 | 0.27 |
| **Number of Days Out of School, Reasons:** | | 16.60 | 24.00 | 25.75 |
| | sick | 0.70 | 0.66 | 0.64 |
| | cost | 0.05 | 0.01 | 0.03 |
| | earn money | 0.01 | 0.01 | 0.01 |
| | help householders | 0.05 | 0.11 | 0.08 |
| | punished | 0.01 | 0.01 | 0.02 |
| | other | 0.31 | 0.33 | 0.21 |
| **If not in school, reason:** | | | | |
| | age | 1.21 | 1.53 | 0.28 |
| | cost | 54.47 | 15.30 | 11.85 |
| | marriage | 4.18 | 3.60 | 3.09 |
| | look after householders | 1.50 | 1.90 | 1.01 |
| | enough education | 4.06 | 7.70 | 8.42 |
| | too far | 4.78 | 5.70 | 8.23 |
| | don't think capable | 7.15 | 7.50 | 6.02 |
| | work | 9.08 | 14.00 | 11.79 |
| | parents unemployed | NA | 0.24 | 0.16 |
| | parent's income too low | NA | 25.20 | 25.85 |
| | sick | NA | NA | 1.36 |
| | lazy | NA | NA | 15.35 |
| | scared | NA | NA | 0.47 |
| | dismissed | NA | NA | 0.22 |
| | other | 13.57 | 17.30 | 5.90 |

# This May '99 question was asked of the households whereas the '98 questions were asked at the level of the child. The '99 data hence may not be directly comparable with the '98 data.

a very small number of households reported pulling children out of school (3 per cent in August 1998 declining to 1 per cent in May 1999). A larger percentage report sending children to work (about 10 per cent in each year). Since we do not have pre-crisis figures with which to compare these figures we don't know if this is more or less than occurred pre-crisis. It may be that these children would have been removed from school or made to work regardless of the crisis. The school attendance figures discussed above and the child labour force participation rates that follow suggest that these are not large increases over previous years.

Households were also asked in the post-crisis surveys about the average number of days children have spent out of school in the previous three months. The number of school days missed increased from an average of 16.6 days in August 1998 to approximately 25 days in both December 1998 and May 1999 (Table 2). This increase seems to be arising from children staying home to help in the household. Again, given the lack of May 1997 data, it is difficult to interpret this change. It is possible for instance that this reflects seasonal variation rather than crisis impact.

Table 2 also provides information on whether households indicated that they had experienced difficulty in paying school expenses. Although pre-crisis figures are not available for comparison, the way in which the figures decline as the crisis continues is consistent with the crisis dissipating sometime between August 1998 and May 1999. For instance, the numbers reporting having difficulty paying fees decreased from 28 per cent in August 1998 to 23 per cent in December 1998 and stayed around that level in May 1999. This decrease in the number of households reporting difficulties meeting school expenses could also be due to the introduction of the social safety net scholarships programme in the 1998/1999 school year. This programme seeks to provide Rp10,000 per month to 6 per cent of primary school students, Rp 20,000 per month to 17 per cent of lower secondary students and Rp 30,000 per month to 10 per cent of upper secondary students. These amounts more than cover the cost of tuition. See Cameron (2000) and Jones et al. (2000) for evaluations of this programme.

Households were also asked in August and December 1998 how they went about overcoming difficulties in paying school fees. The possible responses were delaying payment, borrowing from others, requesting help from others, selling or pawning assets, finding additional work, obtaining a letter of pardon from the village head and "other responses". The figures do not vary much between these two rounds. Delaying payment however is an exception. The number of households who reported doing this dropped six percentage points from 33 per cent in August to 27 per cent in December. Interestingly, this is exactly the proportion of households who reported receiving a scholarship in that year.[13]

13 The question was also asked in May 1999 and all responses increased sharply in this round. There is however a problem of comparability between the May '99 figures and the 1998 figures. The May '99 figures were asked of the household, whereas the 1998 surveys asked the question of each child. The reported increases are potentially alarming – suggesting growing pressure on parents to take their children out of school – but very likely are due to the change in the questionnaire. Households that previously reported having difficulty with school fees for one child are now recorded as having difficulty with all kids.

For children who were not in school at the time of the survey, questions were asked about the reasons for non-attendance. Changes in the range of responses to the question make interpretations difficult, nevertheless consistent with the above results, it does look as though the cost of education became less of a pressing concern after August 1998. About 54 per cent of households cited the cost of schooling as the reason for their child not being in school at that date, whereas that was the stated reason for just over 40 per cent in December 1998 (this is the sum of those who reported cost or parent's income being too low or unemployed parents as being the reason for not attending).

In summary, the results for children's educational attainment show no evidence of a large decline in school attendance. In this respect they are largely consistent with findings of other studies. They show Java/Bali initially being more adversely affected than other regions, but rebounding by 1999, and very little difference in changes in school attendance between rural and urban areas. Girls may have borne more of the brunt of the crisis initially but this situation also righted itself. The attendance decreases are occurring largely in the upper per capita expenditure quintiles. The data on coping mechanisms are difficult to interpret due to the lack of pre-crisis observations and changes in the survey questions post-crisis. Relatively few households, however, report pulling children out of school and there is some indication that the crisis impact may be dissipating.

## ▪ 3.2 *Labour force participation*

The 100 Villages survey asks all members of the household aged 10 and over about their time allocation. Individuals were specifically asked whether they work and if so, how many hours they work. They were then asked in which sector they work and their work status. In the post-crisis surveys they were also asked the reason they stopped work if they did so recently.[14]

Table 3 presents summary statistics for the answers to these questions. We will focus on the May 1997 to May 1999 differences to eliminate concerns with seasonality.[15] The May 1999 figures show that less children are working and also less children are looking for work in May 1999 than in May 1997. This is true both of 10-15 year olds and 16 to 17 year olds. Figure 3a plots labour

14 This question is also asked of those aged five to nine in the post-crisis rounds. Very few of these children work however. For this reason and that there is no comparable pre-crisis data available, we restrict our attention here to individuals aged 10 to 17.

15 The May 1997 questionnaire does differ slightly from the post-crisis questions. Specifically, it asks about the individual's main activity in the last week and then if 'work' was not nominated, asks if the individual worked at least one hour. Those who nominated working as their main activity and those who worked at least one hour in the previous week are then asked about their hours of work. In contrast, the later surveys ask whether an individual worked in the last week and if so, how many hours they worked. The distributions of hours worked were examined to see if the different questions may have altered the reporting behaviour. Slightly more children reported working less than 10 hours in 1997 than in 1999 but this does not seem likely to have been the cause of the systematic differences observed in hours worked discussed below.

force participation by age. It shows that at every age above ten and less than 17, the labour force participation rate in May 1999 is lower than in May 1997. Less attention has been paid in previous studies to child labour force participation than to changes in enrolment rates. Pradhan and Sparrow (2000), however, examine the impact of the crisis on child labour as shown in the Susenas. They find that child labour market participation dropped continuously over the period 1995 to 1998. The 100 Villages results are hence consistent with the Susenas findings.

Figure 3b plots the hours worked by age (conditional on working). It shows that for ages under 13, children are working less hours in May 1999 but that children aged over 13 are working more hours post-crisis.[16] This suggests that it might be children who have left school and so are bona fide workers that are working to make ends meet. Figure 4 explores this explicitly. It shows that for

Table 3: *Crisis Impact on Child Labour - Children Aged 10-17 (percentages)*

| | | May-97 | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|---|
| Working | | 19.7 | 18.8 | 21.6 | 17.4 |
| Job Search | | 2.64 | 1.43 | 1.08 | 1.15 |
| Total | | 22.34 | 20.23 | 22.68 | 18.55 |
| Working: | 10-15yrs | 14.4 | 13.4 | 15.8 | 11.8 |
| | 16-17 yrs | 39.7 | 37.9 | 42.5 | 36.8 |
| Hours if work>0 | 10-15yrs | 24.3 | 25.8 | 25.8 | 25 |
| | 16-17 yrs | 32 | 33.3 | 32.7 | 33.1 |
| Sector * | agriculture | 72.28 | 71.56 | 74.5 | 70.23 |
| | industry | 10.28 | 9.94 | 9.31 | 11.29 |
| | trade | 9.84 | 7.87 | 7.34 | 7.96 |
| | services | 7.16 | 7.64 | 5.43 | 7.52 |
| | other | 0.44 | 2.99 | 3.42 | 3.01 |
| Status | self-employed | 17.5 | 15.81 | 15.14 | 16.17 |
| | employee | 12.24 | 13.54 | 12.37 | 14.92 |
| | family worker | 70.09 | 70.65 | 72.48 | 68.9 |
| Recently Stopped Work: | | | 6.51 | 8.39 | 7.69 |
| Reason: | lost their job | | 7.62 | 4.49 | 3.45 |
| | business folded | | 21.9 | 14.04 | 19.31 |
| | look after household | | 4.76 | 3.93 | 11.72 |
| | inappropriate work | | 10.5 | 6.18 | 6.9 |
| | income too low | | 17.1 | 8.43 | 16.55 |
| | work environment | | 12.4 | 5.62 | 3.45 |
| | other | | 25.7 | 57.3 | 38.62 |

** May '97 - mining and construction classified as industry, transport and communication as services.*

16 At age 17 the hours worked are approximately equal.

Figure 3a: *Labour Force Participation by Age*

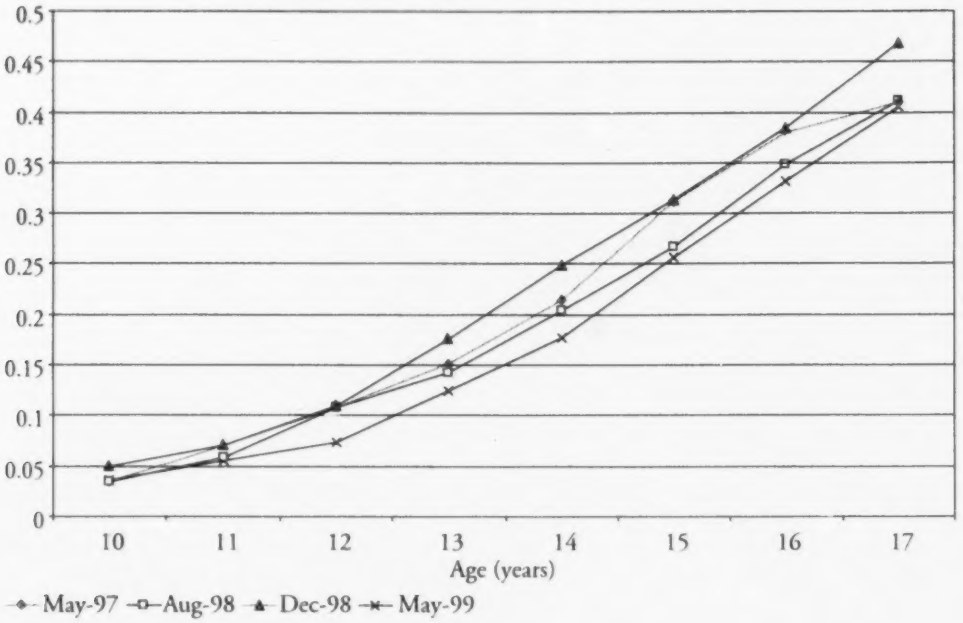
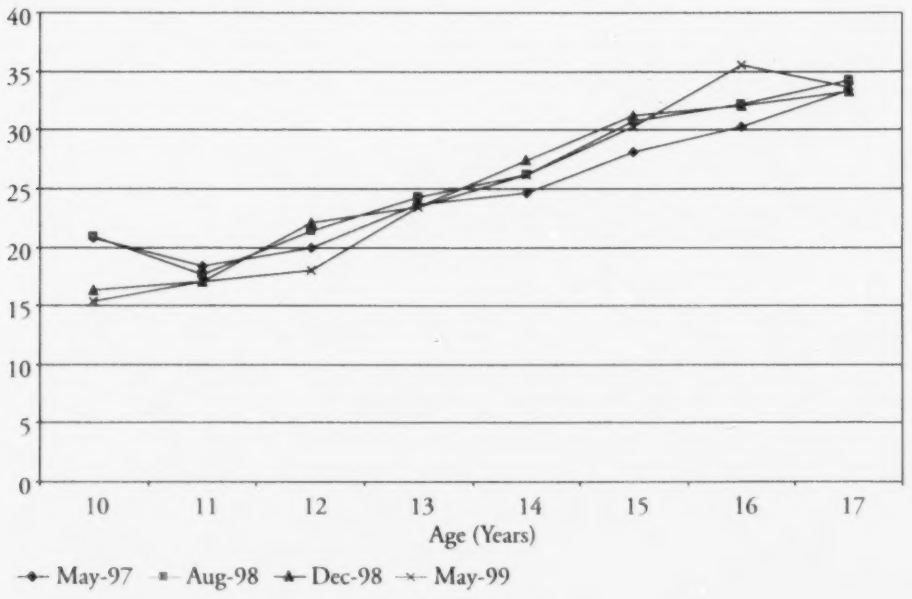



Figure 3b: *Hours Worked by Age if Work*

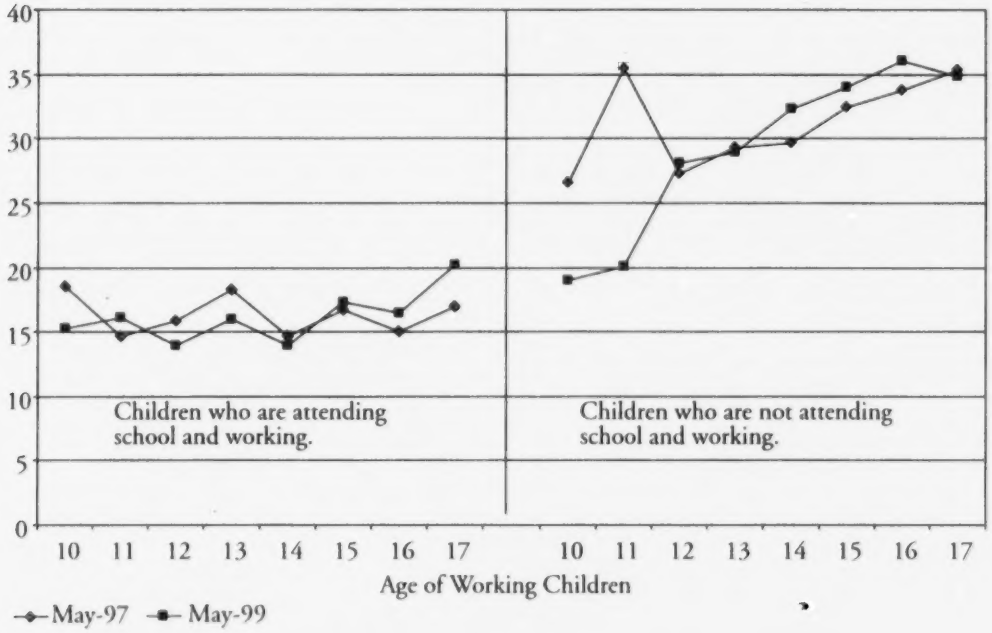



children who are attending school and working there is not a systematic change in hours worked. For children who are not attending school, those aged below 13 are working a lot less hours post-crisis, whereas those aged 14 and above are working more. Hence, older children who have left school and taken on the responsibility of earning an income appear to be working longer hours. Younger children seem to be sheltered from this, possibly due to the lack of jobs.[17]

17 Figure A1 shows labour force participation by age and school attendance – see Annex

Consistent with the observed overall decline in labour force participation by children, quite a large percentage of the sample of children in the post-crisis years report having stopped work recently. The reasons given do not however present us with a clear picture as to why this is. The number who report that their business folded or that they lost their job does however seem to decline after August 1998. (29.5 per cent of those who stopped work reported this as being the reason in August 1998 compared with just over 11 per cent in May 1999.)

Figure 4: *Hours Worked by Age and Enrolment Status*




Given that the crisis has been largely a formal sector phenomenon, one might expect to see changes in the sector of employment and/or in work status that reflect this. For example, one might have anticipated finding a decrease in employees relative to family workers and the self-employed. There are however no systematic changes in children's sector of employment across the years, nor in work status.

In summary, children seem to be working less on average since the crisis. This finding is consistent with the story coming out of the Susenas. This may be due to the difficulty in finding work in a market in which there are so many underemployed adults. Older children who are working and not attending school, however, seem to be shouldering some of the crisis burden by working longer hours than they did pre-crisis.

## ▪ 3.3 *Health indicators*

In the post-crisis rounds of the survey, households were asked whether they had experienced a shortage of food in the period preceding the survey. 17.6 per cent

of households reported that they had in the twelve months preceding August 1998, 14.8 per cent had in the three months preceding December 1998 and this had declined to 12.37 per cent in the three months prior to May 1999. Food shortages and other crisis-related stresses can lead to deterioration in individuals' health status. The survey also specifically asks about a range of health ailments. This question was asked both pre- and post-crisis and so potentially can be used to examine the impact of the crisis on health. Unfortunately, the differences in the pre-crisis and post-crisis questionnaires make this difficult. The question on ailments is actually the same in each round of the survey but in the post-crisis rounds the interviewers are prompted to read out the list of

Table 4: *Child Health Status (children aged 10 yrs and under) – percentages*

| | May-97 | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|
| **Ailments:** Fever | 11.40 | 18.00 | 16.30 | 17.30 |
| Cough | 7.50 | 14.30 | 13.10 | 14.60 |
| Cold | 7.60 | 15.20 | 14.90 | 15.60 |
| Asthma | 0.20 | 0.40 | 0.30 | 0.30 |
| Breathing | 0.40 | 0.60 | 0.30 | 0.30 |
| Diarrhoea | 1.50 | 2.50 | 2.38 | 1.40 |
| Ear problems | 0.10 | 0.30 | 0.13 | 0.10 |
| Jaundice | 0.03 | 0.10 | 0.02 | 0.20 |
| Headache | 1.80 | 2.20 | 1.30 | 1.00 |
| Tooth ache | 0.55 | 1.00 | 0.90 | 0.60 |
| Other | 0.80 | 4.60 | 7.40 | 5.50 |
| Any ailment | 18.70 | 28.40 | 30.30 | 27.40 |
| Sickness disturbs activities | 12.60 | 19.60 | 20.90 | 21.30 |
| **Decompositions of Any Ailment:** | | | | |
| Urban | 16.40 | 31.00 | 30.90 | 24.70 |
| Rural | 19.40 | 27.90 | 30.20 | 28.10 |
| Ratio (Urban/Rural) | 85.00 | 111.00 | 102.00 | 88.00 |
| Male | 18.90 | 28.80 | 30.50 | 28.10 |
| Female | 18.70 | 28.00 | 30.20 | 26.70 |
| Ratio | 101.00 | 103.00 | 101.00 | 105.00 |
| Outer Islands | 18.00 | 31.80 | 29.20 | 25.50 |
| Java/Bali | 19.80 | 23.90 | 31.90 | 29.80 |
| Ratio | 91.00 | 133.00 | 92.00 | 86.00 |
| **Per Capita Expenditure Quintiles:** | | | | |
| Poorest | 17.80 | 28.90 | 27.60 | 27.50 |
| II | 19.20 | 25.40 | 29.90 | 27.40 |
| III | 17.90 | 26.00 | 31.70 | 27.10 |
| IV | 20.00 | 29.20 | 32.20 | 26.20 |
| Richest | 20.60 | 35.80 | 34.20 | 29.30 |

possible ailments when asking if the individual has been sick, rather than just asking if s/he is sick and then asking them to nominate which ailments. This is likely to result in increased reporting of ill health post-crisis. In fact, as shown in Table 4 for children aged 10 and under, the reporting of ailments does increase sharply after the onset of the crisis. (We focus on under 10-year-olds in this section because younger children are more susceptible to ill health.[18]) Most of this increase is coming from increases in the reporting of coughs, colds and fevers. For example, the percentage of children that were reported to have had a cough in the month preceding the survey almost doubled from 7.5 per cent in May 1997 to 14.6 per cent in May 1999. It is, however, impossible to tell whether this is due to the change in the questionnaire or an actual increase in illness.

Decomposing by urban/rural status and geographic location tentatively suggests that some of this variation may reflect crisis impact. Urban areas have been more adversely affected by the crisis due to its financial origins and Table 4 shows larger increases in the incidence of illness in urban areas, although only very slightly from May to May. Similarly, the crisis has hit Java/Bali more harshly than the Outer Islands and the incidence of illness increased by slightly more in Java/Bali.[19] It is hence possible that illness incidence is reflecting the severity of the crisis impact but further evidence is needed to confirm whether this is the case given the change in the questionnaire.

The IFLS data is the main point of comparison for the health results. Frankenburg et al. (1999) find that children's reported health status (self-reported by children over 10 and as reported by the mother for children 10 and under) actually improved between 1997 and 1998.

*Treatment of ailments*

The surveys also provide information on the use of health services. Here again, changes in the questionnaire make comparisons less than straight forward. In May 1997 anyone who was sick or had a health consultation or examination (regardless of whether they had reported ailments) was asked about the source of the treatment. In all of the later rounds however, only those who reported an illness were asked questions as to the type and source of treatment. Given that many more people were reported ill in the post-crisis rounds, we compare the health service utilization of all children who report being treated in 1997 (89 per cent of whom also reported an illness) with the utilization of all children that were reported ill from the other rounds. Table 5 makes such comparisons. A further complication is that the types of care allowed for in the questions also differed from round to round.

18 A plot of illness incidence by age in each round of data shows no difference in the incidence of illness across ages.

19 Although illness incidence increased more in the Outer Islands than in Java in the intervening period.

The main result that comes out of Table 5 is that there has been a marked decrease in reported reliance on community health centres, sub-centres and village health posts. There has also been a large decrease in the percentage of children visiting private health practioners' practices. Table 5 reports measures for usage for different 'levels' of treatment. It shows that use

Table 5: *Treatment of Ailments (children aged 10 years and under)*

| | May-97 | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|
| **Sources of Treatment** | | | | |
| % of children reported to have used: | | | | |
| a. public hospital | 0,019 | 0,02 | 0,015 | 0,011 |
| b. private hospital | 0,01 | 0,005 | 0,007 | 0,006 |
| c. doctor | 0,102 | 0,091 | 0,088 | 0,097 |
| d. community health centre | 0,235 | 0,248 | 0,194 | 0,183 |
| e. community health sub-centre | 0,151 | NA | 0,065 | 0,104 |
| (d)+(e) | 0,386 | 0,248 | 0,259 | 0,287 |
| f. village health post | 0,047 | 0,0167 | 0,007 | 0,018 |
| g. clinic | 0,014 | 0,008 | 0,006 | 0,005 |
| h. health practitioner practice | 0,139 | 0,092 | 0,058 | 0,082 |
| i. traditional healer | 0,065 | 0,014 | 0,013 | 0,013 |
| j. midwife | NA | NA | 0,047 | 0,055 |
| k. village midwife post | NA | 0,026 | 0,007 | 0,013 |
| l. self-treatment* | 0,38 | 0,614 | 0,616 | 0,559 |
| m. other | 0,01 | NA | NA | NA |
| **Different Levels of Treatment** | | | | |
| hospitals/doctors | 0,128 | 0,115 | 0,106 | 0,112 |
| clinic/community health centres and posts | 0,55 | 0,37 | 0,26 | 0,378 |
| traditional healer/self-treatment | 0,403 | 0,625 | 0,626 | 0,567 |
| **Government or Private Sector** | | | | |
| public sector services (a+d+e+f+k) | 0,436 | 0,3 | 0,218 | 0,319 |
| private sector services (b+c+h) | 0,245 | 0,185 | 0,15 | 0,183 |
| ratio (public/private) | 1,78 | 1,62 | 1,45 | 1,74 |
| **Covering Health Expenses** | | | | |
| household | NA | 0,912 | 0,923 | 0,861 |
| insurance/employer | NA | 0,051 | 0,055 | 0,058 |
| heath fund | NA | 0,005 | 0,003 | 0,01 |
| heath card | NA | 0,027 | 0,026 | 0,091 |
| letter that unable | NA | 0,002 | 0,003 | 0,0006 |
| other | NA | 0,026 | 0,018 | 0,017 |

* Questionnaire differs for this category. See text for details.

of 'higher' level treatment, such as is available from both public and private hospitals, has hardly declined but that there has been a large decline in the second tier treatment such as is available from clinics and health centres. In May 1997, 55 per cent of children who received any type of treatment were reported to have attended one of these facilities. By August 1998 this had declined to 38 per cent.[20]

Table 5 also breaks down utilization of facilities by public and private sector. It shows that reliance on public sector services decreased markedly relative to private sector services in August and December 1998, but that the share of public sector treatments had rebounded to just under its pre-crisis level by May 1999. The decline in public sector utilization is also found in the IFLS data and is probably attributable to the decline in the quality of service at public facilities, such as the lack of medication and inability to pay staff. By contrast, in the private sector medicines were more widely available but prices had increased to cover the increased costs.

Finally, Table 5 presents information on how the households met their health expenses. This information is available only in the post-crisis rounds. It clearly shows that the social safety net 'kartu sehat' (health card) programme, which provides free health care for poor families, had become an important source of funds by May 1999. In August 1998 only 2.7 per cent of households had covered costs in this way. This had increased to 9.1 per cent by May 1999.

*Infants and young children*

Infants and young children are more susceptible to illness than older children. The 100 Villages data provides some information specific to younger children (aged under 5 years) and to birthing practices. The information on birthing and breastfeeding is summarized in Table 6. The table shows no systematic change in behaviour over the period.[21]

The data sets also provide information on the weight at birth of children currently aged under five and also their current weight. The probability density function of weight at birth was estimated non-parametrically for each round of the data and plotted. The densities lay almost exactly on top of one another. Similarly, non-parametric regressions were run for current weight on age for each round. These functions also hardly differed across the different rounds. (Figures available from the author on request.) IFLS respondents were also

20 A much larger proportion of the population also report relying on self-treatment in the later rounds of the survey. In the post-crisis surveys however individuals were specifically prompted as to whether they had treated themselves for an illness in the past month, whereas in May 1997 self-treatment had appeared only as one of several treatment options. This change in the questionnaire is possibly responsible at least in part for the large increase in reported self-treatment post-crisis.

21 In May 1997 mothers were asked who helped during the birth process. In the later rounds they were asked to designate who was the first to help during the birth and who provided the final help. Table 6 presents both lots of figures. The figures on the first helper correspond closely to those reported in May 1997.

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weighed and measured. As is found here, the IFLS showed no evidence of a decline in children's weight-for-height nor in height-for-age. There was, however, evidence that adults' body mass indexes had deteriorated over the period, suggesting that parents may be shielding their children from the health impacts of the crisis, to their own detriment.

Table 6: *Birthing and Breastfeeding Summary Statistics*

| | May-97 | Aug-98 | | Dec-98 | | May-99 | |
|---|---|---|---|---|---|---|---|
| | | First* | Last* | First | Last | First | Last |
| **Birthing (%)** | | | | | | | |
| doctor | 2.68 | 3.29 | 3.64 | 2.99 | 3.76 | 2.58 | 2.97 |
| midwife | 23.98 | 24.53 | 28.28 | 22.93 | 27.93 | 24.33 | 29.61 |
| other medical practitioner | 0.9 | 0.42 | 0.61 | 0.34 | 0.58 | 0.63 | 0.89 |
| traditional healer | 65.47 | 65.33 | 60.75 | 67.53 | 61.61 | 66.09 | 60.54 |
| family | 4.87 | 5.56 | 5.54 | 5.86 | 5.47 | 5.53 | 5.42 |
| other | 2.1 | 0.87 | 1.18 | 0.34 | 0.65 | 0.83 | 0.57 |
| **Breastfeeding (%)** | | | | | | | |
| yes | 98 | 97.9 | | NA | | 98.27 | |
| no | 2 | 2.09 | | NA | | 1.73 | |

** In the post-crisis rounds, mothers were asked to designate the first person to help them during the birth and the last person to help them.*

## 4. Conclusions

The later rounds of the 100 Villages data are consistent with earlier studies in that they provide no evidence of the crisis having had a large, systematic and negative impact on the well-being of children. School attendance rates declined slightly at the onset of the crisis but have since rebounded to levels beyond their pre-crisis levels. Less children are working since the crisis began than were before (probably due to the difficulty in finding work), although older children who aren't enrolled in school are working longer hours.

There is no clear indication of a deterioration in children's health status. The distributions of weight at birth and weight-by-age appear to be stable. The reported incidence of illness has increased and does appear to vary somewhat with crisis impact but further evidence is needed to confirm that this is not due to changes in the questionnaire across rounds. In terms of the treatment of ailments, there has been a reduction in the reliance on public health services. This probably reflects quality decline in these services and could constitute a burden on low income households and could have consequences for future changes in health status. It is worth noting that deterioration in health indicators may be expected to occur predominantly in the mid- to long-term and the decline in the utilization of services can feed into this. That the use of the 'kartu sehat' to cover health costs has expanded is promising, however, as is the finding that birthing and breastfeeding practices have not changed.

As noted above, the less than dramatic short-term impact of the crisis on child welfare indicators may not be mirrored in the long term. Many households are currently coping by selling assets and borrowing from others. The crisis' greatest social impact may occur only once these forms of support have been depleted. It is thus important to continue to monitor the welfare of families over the next few years.

The 100 Villages data is a valuable resource for examining the impact of the crisis at the household level. Its usefulness is limited, however, in some cases quite severely, by the lack of comparability in the questionnaires in the different rounds of the survey. Comparisons across different agricultural seasons are also difficult to interpret. It would thus be useful to focus resources on producing a standardized questionnaire that would be repeated annually rather than in the current four-monthly cycle. Although the panel nature of the data was not exploited here, it is potentially another of the data's valuable offerings. However, it is currently very difficult to merge the data across rounds. Effort needs to be focused on facilitating the merging of households and individuals across rounds of the data and minimizing the attrition bias and the rate of rotation of households through the panel.

## Annex

Table A1: *Enrolment Rates by Per Capita Expenditure Quintiles (percentages)*

| | May-97 | Aug-98 | Dec-98 | May-99 |
|---|---|---|---|---|
| A. Primary School | | | | |
| QI | 75 | 83 | 82 | 77 |
| QII | 80 | 87 | 85 | 82 |
| QIII | 83 | 89 | 88 | 84 |
| QIV | 85 | 91 | 90 | 84 |
| QV | 87 | 93 | 93 | 89 |
| B. Lower Secondary School | | | | |
| QI | 58 | 57 | 62 | 60 |
| QII | 64 | 61 | 63 | 68 |
| QIII | 71 | 66 | 64 | 74 |
| QIV | 81 | 72 | 73 | 77 |
| QV | 87 | 80 | 84 | 79 |
| C. Upper Secondary School | | | | |
| QI | 20 | 17 | 19 | 23 |
| QII | 26 | 25 | 27 | 30 |
| QIII | 34 | 33 | 30 | 34 |
| QIV | 42 | 42 | 46 | 45 |
| QV | 53 | 51 | 50 | 49 |

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# THE IMPACT OF THE INDONESIAN FINANCIAL CRISIS ON CHILDREN: AN ANALYSIS USING THE 100 VILLAGES DATA

This paper examines the impact of the Asian crisis on children in Indonesia. Data from four rounds of the 100 Villages Survey are used to examine changes in school attendance rates, child labour force participation and health status. The findings – which must be tempered by the recognition that our data runs only up to May 1999 – show little evidence that the crisis has had a dramatic negative impact on children. School attendance dropped slightly after the onset of the crisis but has since rebounded to higher than pre-crisis levels. Fewer children are now working, although the older children who are working and are not attending school seem to be working longer hours. Comparisons of child health status indicators over time are complicated by changes in the questionnaire but appear to be relatively stable. However, the impact on children may only be observed in the long run – after households' financial resources have been completely depleted and several years of hardship have impacted on health.

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